

PCT REQUEST

Original (for SUBMISSION)

0	For receiving Office use only	
0-1	International Application No.	
0-2	International Filing Date	
0-3	Name of receiving Office and "PCT International Application"	
0-4	Form - PCT/RO/101 PCT Request	
0-4-1	Prepared Using	PCT-SAFE [EASY mode] Version 3.50 (Build 0002.150)
0-5	Petition The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty	
0-6	Receiving Office (specified by the applicant)	United States Patent and Trademark Office (USPTO) (RO/US)
0-7	Applicant's or agent's file reference	5504-1167
I	Title of Invention	TUNGSTEN-BASED ELECTROCATALYST AND FUEL CELL CONTAINING SAME
II	Applicant	
II-1	This person is:	applicant only
II-2	Applicant for	all designated States except US
II-4	Name:	OSRAM SYLVANIA INC.
II-5	Address:	100 Endicot Street Danvers, MA 01923 United States of America
II-6	State of nationality	US
II-7	State of residence	US
II-8	Telephone No.	978-750-2312
II-9	Facsimile No.	978-750-2045
III-1	Applicant and/or inventor	
III-1-1	This person is:	applicant and inventor
III-1-2	Applicant for	US only
III-1-4	Name (LAST, First)	CHRISTIAN, Joel B.
III-1-5	Address:	37 Third Street Towanda, Pennsylvania 18848 United States of America
III-1-6	State of nationality	US
III-1-7	State of residence	US

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IV-1	Agent or common representative; or address for correspondence The person identified below is hereby/ has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:	agent
IV-1-1	Name (LAST, First)	CASTEL, Benoit
IV-1-2	Address:	c/o YOUNG & THOMPSON 745 South 23rd Street, Suite 200 Arlington, VA 22202 United States of America
IV-1-3	Telephone No.	703-521-2297
IV-1-4	Facsimile No.	703-685-0573
IV-1-5	e-mail	embon@young-thompson.com
IV-1-6	Agent's registration No.	35,041
V	DESIGNATIONS	
V-1	The filing of this request constitutes under Rule 4.9(a), the designation of all Contracting States bound by the PCT on the international filing date, for the grant of every kind of protection available and, where applicable, for the grant of both regional and national patents.	
VI-1	Priority claim of earlier national application	
VI-1-1	Filing date	26 March 2003 (26.03.2003)
VI-1-2	Number	60/320,056
VI-1-3	Country	US
VI-2	Priority document request The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) identified above as item(s):	VI-1
VII-1	International Searching Authority Chosen	United States Patent and Trademark Office (USPTO) (ISA/US)

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VIII	Declarations	Number of declarations	
VIII-1	Declaration as to the identity of the inventor	-	
VIII-2	Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent	-	
VIII-3	Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application	-	
VIII-4	Declaration of inventorship (only for the purposes of the designation of the United States of America)	-	
VIII-5	Declaration as to non-prejudicial disclosures or exceptions to lack of novelty	-	
IX	Check list	number of sheets	electronic file(s) attached
IX-1	Request (including declaration sheets)	4	-
IX-2	Description	9	-
IX-3	Claims	2	-
IX-4	Abstract	1	✓
IX-5	Drawings	4	-
IX-7	TOTAL	20	
	Accompanying Items	paper document(s) attached	electronic file(s) attached
IX-8	Fee calculation sheet	✓	-
IX-17	PCT-SAFE physical media	-	✓
IX-19	Figure of the drawings which should accompany the abstract	1	
IX-20	Language of filing of the international application	English	
X-1	Signature of applicant, agent or common representative		
X-1-1	Name:	CASTEL, Benoit	
X-1-2	Name of signatory		
X-1-3	Capacity		

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10-1	Date of actual receipt of the purported international application	
10-2	Drawings:	
10-2-1	Received	
10-2-2	Not received	
10-3	Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application	
10-4	Date of timely receipt of the required corrections under PCT Article 11(2)	
10-5	International Searching Authority	ISA/US
10-6	Transmittal of search copy delayed until search fee is paid	

FOR INTERNATIONAL BUREAU USE ONLY

11-1	Date of receipt of the record copy by the International Bureau	
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PCT (ANNEX - FEE CALCULATION SHEET)Original (for **SUBMISSION**)

(This sheet is not part of and does not count as a sheet of the international application)

0	For receiving Office use only	
0-1	International Application No.	
0-2	Date stamp of the receiving Office	
0-4	Form PCT/RO/101 (Annex)	
0-4-1	PCT Fee Calculation Sheet Prepared Using	PCT-SAFE [EASY mode] Version 3.50 (Build 0002.150)
0-9	Applicant's or agent's file reference	5504-1167
2	Applicant	OSRAM SYLVANIA INC.
12	Calculation of prescribed fees	
		fee amount/multiplier Total amounts (USD)
12-1	Transmittal fee T	⇒ 300
12-2-1	Search fee S	⇒ 1000
12-2-2	International search to be carried out by	US
12-3	International filing fee (first 30 sheets) I1	1035
12-4	Remaining sheets	0
12-5	Additional amount (X) 0	
12-6	Total additional amount I2	0
12-7	I1 + I2 = I	1035
12-12	EASY Filing reduction R	-74
12-13	Total International filing fee (I-R) I	⇒ 961
12-14	Fee for priority document	
	Number of priority documents requested	1
12-15	Fee per document (X) 20	
12-16	Total priority document fee: P	⇒ 20
12-17	TOTAL FEES PAYABLE (T+S+I+P)	⇒ 2281
12-19	Mode of payment	authorization to charge deposit account
12-20	Deposit account instructions	
	The receiving Office	United States Patent and Trademark Office (USPTO) (RO/US)
12-20-1	Authorization to charge the total fees indicated above.	✓
12-20-2	Authorization to charge any deficiency or credit any overpayment in the total fees indicated above.	✓
12-20-3	Authorization to charge the fee for priority document.	✓
12-21	Deposit account No.	25-0120
12-22	Date	25 March 2004 (25.03.2004)
12-23	Name and signature	CASTEL, Benoit

The catalyst of this invention is a non-stoichiometric tungsten compound, $H_{0.53}WO_3$, which may be used as both the anode and cathode electrocatalyst for acid-style low-temperature fuel cells. A fuel cell using the tungsten-based electrocatalyst as both the anode and cathode has been constructed and operated with a hydro fuel and an air oxidant.